

Serial No. 10/017,786

REMARKS

This amendment is responsive to the Official Action dated March 14, 2003.

Claims 1 - 34 were pending in the application. No claims were allowed.

By way of this amendment, the Applicant has amended claims 1, 8, 17, 19, and 30, and canceled claim 28.

Accordingly, claimed 1-27 and 29-34 are currently pending. Favorable reconsideration of all claimed is respectfully solicited in view of the Remarks below.

Rejections under 35 USC § 112:

Claims 27-29 were rejected under 35 USC §112, first paragraph as lacking support within the specification.

With regard to claims 27 and 29, the appropriate support is found in Fig. 20 of the drawings where 510 is the conductive layer, elements 560(a) and 560(b) form the resistor contacts, and the resistor path is 560(a) to layer 510 to 560(b). 560(a) and 580(c) form a capacitor pair.

Claim 28 has been canceled.

Withdrawal of the rejection and reconsideration of the rejection is respectfully solicited.

Claims 8, 17, and 30-34 were rejected under 35 USC §112, second paragraph. The term "dielectric" in claim 8, and "second" electrode in claims 17 do not have antecedent support. The term "VCSEL" in claim 30 is unclear.

The term "dielectric" in claim 8 has been changed to "insulator" consistent with the antecedent claims.

The term "the second" in claim 17 has been changed to "a second" to correct the antecedent basis.

The term "VCSEL" in claim 30 has been amended to more specifically identify the structure.

Withdrawal of the rejection and reconsideration is respectfully solicited.

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Rejections under 35 USC §102:

Claims 1-3, 5, 7, 10, 13, 19, 21, 23 and 26 were rejected under 35 USC §102 as being unpatentable over the US Patent to Flynn. The Examiner has asserted that Figs. 1, 2 and 3Q illustrate a photodetector 20, 30 and capacitor 22, 35A, 42 coupled between the photodetector bias terminal and ground.

Referring to Fig. 1 of the present invention, there is disclosed a photodiode 10 having anode 14 and cathode 16, and a transimpedance amplifier (TIA) 20 having an input terminal 18 connected to anode 14, and a ground terminal. A bias terminal 12 is connected to the cathode 16. A capacitor 22 is shunted between the cathode 16 and the ground 24. In this arrangement, bias is applied to the cathode 16 of the photodiode. The capacitor 22 capacitively couples the bias terminal (power supply voltage Vcc) to the AC ground of the TIA at the point where the un-amplified current signal generated by the photodetector is passed to the TIA. The capacitor is thus a path to pass AC signal from the bias terminal to ground. The on-chip capacitor eliminates the inductance of external circuit traces between the power supply and an external capacitor.

Referring to Flynn (Fig. 1) there is disclosed a photodiode (PD) 20 with anode 30. The capacitor (C) 42/22 is connected in series with the anode and cathode of the photodiode 20. In this arrangement the capacitor is intended to store a charge from the photodiode. It essentially acts as a memory element for the photodiode which is periodically read in a scanning operation. Flynn shows a ground at 64 and a voltage supply Vcc at 60. The ground 64 is coupled to the PD/C series circuit between one terminal of the capacitor and the anode of the PD. As far as understood by the Applicant, the cathode of PD 20 is not biased as currently claimed. The cathode terminal of the PD is connected to a logic gate at 38 which is normally open until it is desired to read (dump) the charge from the capacitor. At polling, the capacitor charge is shunted to a sensing amplifier.

To be analogous to the claimed invention, the node 38 would have to apply a continuous bias to the photodetector 20. In reality node 38 is a latch transistor which isolates the node until it is desired to be read. The latch transistor is normally open, and then closed during the read operation to allow the charge to pass to the sensing amplifier.

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In summary, the capacitor in Flynn is not believed to be coupled between the photodetector AC ground and the photodetector bias terminal as claimed. The capacitor in Flynn acts as a memory element to store information about the level being sensed by the photodetector, while the capacitor in the present invention serves to provide a continuous path to AC ground. The underlying functionality is entirely different and thus the underlying structural connections are also different.

Favorable reconsideration of the rejected claims is respectfully solicited.

Rejections under 35 USC §103:

Claims 6-10 and 14 were rejected under 35 USC §103 as being unpatentable over Flynn. The Examiner has asserted that the claimed materials are well known for use as a dielectric in the art.

In light of the above-noted Remarks with respect to Flynn and the underlying claims, the present rejection is not longer believed to be applicable. Favorable reconsideration is respectfully solicited.

Other References:

It is believed that the other cited references are similar in scope and function to Flynn and therefore the same arguments are applicable.

Allowable claims:

Applicant acknowledges the allowability of claims 4, 11, 12, 15, 16, 18 20, 22, 24 and 25 if rewritten to include all of the subject matter of the intervening claims. Applicant shall withhold rewriting of these allowable claims until reconsideration of the base claims per the above arguments with respect to Flynn.

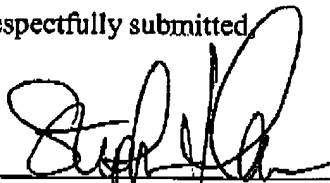
Accordingly, claims 1-34 are believed to be in condition for allowance and the application ready for issue.

Corresponding action is respectfully solicited.

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Respectfully submitted,



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